In The Claims:

Claims 1-7. (Cancelled)

8. (Previously Presented) A system for effectively performing an image data transformation procedure, comprising:

an electronic camera device configured to capture primary image data corresponding to a photographic target; and

a transformation manager configured to convert said primary image data into secondary image data by utilizing transformation parameters that are optimized to minimize noise characteristics in said secondary image data, said primary image data being in an RGB format that is converted into said secondary image data in a YCbCr format by said transformation manager during said image data transformation procedure, said transformation parameters being optimized by evaluating an optimization metric that is evaluated in a linear L*a*b* color space to minimize said noise characteristics in said secondary image data, standard noise deviations above and below an average L* value being calculated for each color patch from a representative patch set, said standard noise deviations being utilized to calculate noise variance values for each of said color patches according to a formula:

$$NV = (SND)^2$$

where SND is one of said standard noise deviations, and NV is a corresponding one of said noise variance values used to calculate said optimization metric.

9. (Original) The system of claim 8 wherein said optimization metric is calculated by taking an average of said noise variance values for each color patch according to a formula:

$$\Phi \text{ (gain, illuminant, k1, k2, k3)} = (NV_1 + NV_2 + NV_3 + \ . \ . \ . \ NV_M)/ M$$

where "M" is a total number of said color patches in said patch set, "NV" is one of said noise variance values, and "Φ (gain, illuminant, k1, k2, k3)" is said optimization metric for particular values of a camera gain, an illuminant, and a selection of said transformation parameters "k1", "k2", and "k3".

Claims 10-13. (Cancelled)

14. (Currently Amended) A system for effectively performing an image data transformation procedure, comprising:

an electronic camera device configured to capture primary image data corresponding to a photographic target; and

a transformation manager configured to convert said primary image data into secondary image data by utilizing transformation parameters that are optimized to minimize noise characteristics in said secondary image data, said primary image data being in an RGB format that is converted into said secondary image data in a YCbCr format by said transformation manager during said image data transformation procedure, said transformation manager performing said image data transformation procedure by utilizing said transformation parameters that include a first transformation parameter "k1", a second transformation parameter "k2", and a combination parameter "k3", said transformation parameters being optimized and stored in parameter lookup tables in said camera device for each illuminant at each camera gain, said parameter lookup tables being implemented in a minimized format with a

reduced number of said transformation parameters, said transformation manager utilizing ~~said~~ interpolation techniques to interpolate ~~said~~ additional transformation parameters for certain of said camera gains and said illuminants that are not specifically listed in said parameter lookup tables.

15. (Previously Presented) A system for effectively performing an image data transformation procedure, comprising:

an electronic camera device configured to capture primary image data corresponding to a photographic target; and

a transformation manager configured to convert said primary image data into secondary image data by utilizing transformation parameters that are optimized to minimize noise characteristics in said secondary image data, said primary image data being in an RGB format that is converted into said secondary image data in a YCbCr format by said transformation manager during said image data transformation procedure, said transformation manager performing said image data transformation procedure by utilizing said transformation parameters that include a first transformation parameter "k1", a second transformation parameter "k2", and a combination parameter "k3", said transformation parameters being restricted by parameter limits in which said first transformation parameter "k1" is limited according to a first formula: $0 \leq k1 \leq 1$, said second transformation parameter "k2" is limited according to a second formula: $0 \leq k2 \leq 1$, said third transformation parameter $(1 - k1 - k2)$ is limited according a third formula: $0 \leq (1 - k1 - k2) \leq 1$, and said combination transformation parameter "k3" is limited according to a fourth formula: $0 \leq k3 \leq 2$.

Claims 16-27. (Cancelled)

28. (Previously Presented) A method for effectively performing an image data transformation procedure, comprising:

capturing primary image data corresponding to a photographic target by utilizing an electronic camera device; and

utilizing a transformation manager to convert said primary image data into secondary image data by using transformation parameters that are optimized to minimize noise characteristics in said secondary image data, said primary image data being in an RGB format that is converted into said secondary image data in a YCbCr format by said transformation manager during said image data transformation procedure, said transformation parameters are optimized by evaluating an optimization metric that is evaluated in a linear L*a*b* color space to minimize said noise characteristics in said secondary image data, standard noise deviations above and below an average L* value being calculated for each color patch from a representative patch set, said standard noise deviations being utilized to calculate noise variance values for each of said color patches according to a formula:

$$NV = (SND)^2$$

where SND is one of said standard noise deviations, and NV is a corresponding one of said noise variance values used to calculate said optimization metric.

29. (Original) The method of claim 28 wherein said optimization metric is calculated by taking an average of said noise variance values for each color patch according to a formula:

$$\Phi \text{ (gain, illuminant, k1, k2, k3)} = (NV_1 + NV_2 + NV_3 + \ . \ . \ . \ NV_M)/\ M$$

where "M" is a total number of said color patches in said patch set, "NV" is one of said noise variance values, and "Φ (gain, illuminant, k1, k2, k3)" is said optimization metric for particular values of a camera gain, an illuminant, and a selection of said transformation parameters "k1", "k2", and "k3".

Claims 30-33. (Cancelled)

34. (Currently Amended) A method for effectively performing an image data transformation procedure, comprising:

capturing primary image data corresponding to a photographic target by utilizing an electronic camera device; and

utilizing a transformation manager to convert said primary image data into secondary image data by using transformation parameters that are optimized to minimize noise characteristics in said secondary image data, said primary image data being in an RGB format that is converted into said secondary image data in a YCbCr format by said transformation manager during said image data transformation procedure, said transformation manager performing said image data transformation procedure by utilizing said transformation parameters that include a first transformation parameter "k1", a second transformation parameter "k2", and a combination parameter "k3", said transformation parameters being optimized and stored in parameter lookup tables in said camera device for each illuminant at each camera gain, said parameter lookup tables being implemented in a minimized format with a reduced number of said transformation

parameters, said transformation manager utilizing ~~said~~ interpolation techniques to interpolate ~~said~~ additional transformation parameters for certain of said camera gains and said illuminants that are not specifically listed in said parameter lookup tables.

35. (Previously Presented) A method for effectively performing an image data transformation procedure, comprising the steps:

capturing primary image data corresponding to a photographic target by utilizing an electronic camera device; and

utilizing a transformation manager to convert said primary image data into secondary image data by using transformation parameters that are optimized to minimize noise characteristics in said secondary image data, said primary image data being in an RGB format that is converted into said secondary image data in a YCbCr format by said transformation manager during said image data transformation procedure, said transformation manager performing said image data transformation procedure by utilizing said transformation parameters that include a first transformation parameter "k1", a second transformation parameter "k2", and a combination parameter "k3", said transformation parameters being restricted by parameter limits in which said first transformation parameter "k1" is limited according to a first formula: $0 \leq k1 \leq 1$, said second transformation parameter "k2" is limited according to a second formula: $0 \leq k2 \leq 1$, said third transformation parameter $(1 - k1 - k2)$ is limited according a third formula: $0 \leq (1 - k1 - k2) \leq 1$, and said combination transformation parameter "k3" is limited according to a fourth formula: $0 \leq k3 \leq 2$.

Claims 36-42. (Cancelled)